1896MNRAS..56..189.

In 1870, on resigning this appointment, he settled for the remainder of his life at Brantholme, Kendal.

He was twice married, and had six children by his first wife, four of whom survive him.

Highly cultured, refined and scholarly in all his tastes, and with a mind ever reaching after things high and heavenly, it was little wonder that the bent of his purely scientific pursuits turned strongly towards astronomy, a science which, in all its branches, retained its charm for him and exercised his unimpaired intellectual faculties unto the end.

Isaac Brown was elected a Fellow of the Royal Astronomical Society in 1851. While at the Flounder's Institute he was in the habit of using a $4\frac{1}{2}$-inch refractor by Cooke & Sons, also a transit instrument for obtaining correct astronomical time. As years went on every new discovery was to him a subject of interest and delight, and but for his advanced age, a fact not always easy to realise, he would probably have become a member of the British Astronomical Association, a society in the establishment and progress of which he took the deepest interest, hailing with especial satisfaction its admission of ladies to equal honours.

Very recent letters exist in which, in his peculiarly fine and clear handwriting, he dilated on the wonderful discoveries of modern astronomy, as much in touch with the times he lived in as any of the younger votaries of science.

Isaac Brown was for forty-five years a Fellow of the Royal Meteorological Society, and also in earlier life devoted considerable time to botanical research.

He died on 1895 November 3.

[For the above particulars the Council is indebted to Miss E. Brown.]

James Campbell was fourth child and only surviving son of Major-General Sir James Campbell, K.C.B., of Sanda, Argyllshire, and his wife the Lady Dorothea Louisa Cuffe, daughter of the Earl of Desart.

He was born 1822 October 30, at Mount Lavinia, in Ceylon, of which his father was then Governor. Sir James was also Governor of Grenada afterwards. Before this he had served with distinction throughout the Peninsular Campaign in command of the 94th Regiment. Owing to his position and occupation the family were constantly travelling, and James was educated abroad, chiefly in France. He showed his strong taste for study while very young, and took the degree of Bachelier-ès-Arts in Paris at an unusually early age. Later on, in London, he studied law, and was called to the Bar (Middle Temple), but he never practised.

When Vice-Admiral Sir C. Napier took his fleet in 1854 to the Baltic, Mr. Campbell accompanied it in his yacht the *Esmeralda*, and was present at the bombardment and capture of Bomarsund. It was during this time that his vessel was stationed

1896MNRAS..56..189.

as a kind of light-ship near the "Bell Rock" to warn others from this dangerous spot. Early in the Italian War of Independence Mr. Campbell enlisted in the Foreign Legion, and served as aide-de-camp to Garibaldi, whom he knew and greatly admired. When the latter came to London Mr. Campbell saw him frequently, and was at the dinner given to the distinguished visitor at the Reform Club.

Soon after his return from Italy, in 1860, Mr. Campbell met and married Miss Ellen Cottingham. They had only one child, a daughter. His wife's health being delicate, he left his residence in Kilburn about four years after his marriage, and went to live in the country. Barnet, in Hertfordshire, was the place finally settled on, and there he bought Arkley House, where he lived many years.

In 1865 Mr. Campbell was a candidate for Chester, but was unsuccessful. Political life was not altogether to his taste, and he soon relinquished all attempts in that direction.

What he most loved was science of every kind, but particularly the science of mathematics. He soon became so absorbed by astronomy that in 1877–78 he built the Arkley Observatory, and devoted himself to astronomical matters. In conjunction with Mr. Neison (now Mr. Neville-Nevill, of the Durban Observatory, Natal) he worked for several years at the Lunar Theory. The first joint paper by Campbell and Neison appears in *Monthly Notices*, vol. xl. pp. 386–411 and 441–472, and is entitled "On the Determination of the Solar Parallax by means of the Parallactic Inequality in the Motion of the Moon." After discussing at length previous observations available for this purpose, the authors conclude that the chief systematic errors affecting these observations can be avoided by observing transits of a small crater on the Moon instead of the limb, and declare their intention of making a series of observations on the crater Murchison A. This work was commenced at the Arkley Observatory in 1879 April, and in that year twenty-one observations were obtained. In 1880 fifty-three were added, in 1881 another fifty-three, and others (not specified) in 1882, the report in 1883 February being the last received by this Society from the Arkley Observatory.

Since his removal to Natal, Mr. Neison [Nevill] has carried on these observations and the work of reducing them, and in the report of the Natal Observatory for 1892 February he writes: "The final touches are also being put to the discussion of the observations of the position of the lunar crater Murchison A, made at the Arkley Observatory in the years 1879–1884, and at the Natal Observatory during the years 1883–1886."

In 1885, for various reasons, Mr. Campbell broke up his work and left Arkley. Shortly before he left he began to give much time and study to mechanical inventions. Among other patents taken out by him was a very ingenious ship's log, which showed on a dial on board the exact speed of the ship from time to time.

1896MNRAS..56..189.

From Arkley he went to live at Bush Hill Park, Enfield, and in 1888 he again removed, to Strawberry Hill, Twickenham, to be near his daughter and her husband. There in 1892 June his wife died. Mr. Campbell felt his loss acutely, and never entirely recovered either health or spirits, though up to this time he had been a man of robust constitution, singularly simple in tastes and habits. In 1894 December he caught a severe cold, which ended in influenza and severe bronchitis, and after a painful illness of a few days he passed away on December 11 in his seventy-third year.

During his latter years Mr. Campbell bore many severe trials with wonderful patience and fortitude, and these, instead of souring or embittering, seemed to show up more strongly the sterling qualities of his mind and nature. To the last he retained his devotion to learning and science and his wonderful love for animals, especially dogs. For over forty years he possessed a very fine breed of Newfoundlands. Several generations had been his loved companions; he was never without one or two wherever he went. "Mr. Campbell's great dogs" were as well known as himself.

[For many of these particulars the Council is indebted to Mr. Campbell's daughter, Mrs. Campbell-Heap.]

ARTHUR CAYLEY was the second son of Henry Cayley, a Russia merchant settled at St. Petersburg. He was born at Richmond, Surrey, on 1821 August 16, during a short visit of his parents to this country. The family returned permanently to England in 1829, and after a time fixed their residence at Blackheath, Kent. He was sent to a private school at that place, kept by the Rev. G. B. F. Potticary, and at the age of fourteen he went to King's College School, London. He came up to Trinity College, Cambridge, in 1838, and graduated in 1842 as Senior Wrangler and First Smith's Prizeman. It has often been the subject of remark that four such distinguished mathematicians as Leslie Ellis, Stokes, Cayley, and Adams should have been senior wranglers in four successive years.

Cayley was elected Fellow of his college in the year in which he took his degree, and was assistant tutor for about three years. As he did not take holy orders his fellowship was only tenable for a limited term, and it was necessary for him to select a profession. He chose the Bar, and about 1847 he became a pupil of the eminent conveyancer, Mr. Christie. He was called to the Bar in 1849, and during the time that he practised was always supplied by Mr. Christie with as much conveyancing work as he was willing to undertake.

As an undergraduate he had shown very marked mathematical ability, and had already published two or three papers in the *Cambridge Mathematical Journal* at the time of the examination for his degree. The *viva voce* part of the examination still existed then, and Mr. Gaskin, the Senior Moderator, told him that he was acquainted with his papers and need ask